

SEQUENCE LISTING

<110> De Buyl, Eric
Lahaye, Andree
Ledoux, Pierre
Detroz, Rene

<120> Xylanase, Microorganisms Producing it,
DNA Molecules, Methods for Preparing this Xylanase and Uses
of the Latter

<130> GC450-D1-US

<140> US 09/909,207

<141> 2001-07-19

<150> US 08/470,953

<151> 1995-06-06

<150> BE 09500448

<151> 1995-05-17

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<151> 1994-07-26

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<213> Bacillus sp.

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 aacaatgtta acaacatatt attccgtaaa ggtaaaaaat tcaatgaaac acaaacacac 180
 caacaagttg gtaacatgtc cataaactac ggagccaact tccaaccaa tggtaatgctg 240
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 tggggcaact ggcgtccacc aggagcaacg cctaagggga ccatcactgt tgatggagga 360
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 tttaaacaat attggagtgt tcgaagatcg aaacgcacga gtggcacgat ttctgtcagc 480
 aaccacttta gagcgtggga aaacttaggg atgaatatgg ggaaaatgta tgaagtcgctg 540
 cttactgtag aaggctatca aagtagcgga agtgctaata tatatagcaa tacactaaga 600
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<221> mat_peptide

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gaa ttt tgg aaa gat agc ggt ggc tct ggg aca atg att ctc aat cat	96
Glu Phe Trp Lys Asp Ser Gly Gly Ser Gly Thr Met Ile Leu Asn His	
20 25 30	
ggc ggt acg ttc agt gcc caa tgg aac aat gtt aac aac ata tta ttc	144
Gly Gly Thr Phe Ser Ala Gln Trp Asn Asn Val Asn Asn Ile Leu Phe	
35 40 45	
cgt aaa ggt aaa aaa ttc aat gaa aca caa aca cac caa caa gtt ggt	192
Arg Lys Gly Lys Lys Phe Asn Glu Thr Gln Thr His Gln Gln Val Gly	
50 55 60	
aac atg tcc ata aac tac gga gcc aac ttc caa cca aat ggt aat gcg	240
Asn Met Ser Ile Asn Tyr Gly Ala Asn Phe Gln Pro Asn Gly Asn Ala	
65 70 75 80	
tat tta tgc gtc tat ggt tgg act gtt gac cct ctt gtc gaa tat tat	288
Tyr Leu Cys Val Tyr Gly Trp Thr Val Asp Pro Leu Val Glu Tyr Tyr	
85 90 95	
att gtc gac agt tgg ggc aac tgg cgt cca cca gga gca acg cct aag	336
Ile Val Asp Ser Trp Gly Asn Trp Arg Pro Pro Gly Ala Thr Pro Lys	
100 105 110	
ggg acc atc act gtt gat gga gga aca tat gat atc tac gag act ctt	384
Gly Thr Ile Thr Val Asp Gly Gly Thr Tyr Asp Ile Tyr Glu Thr Leu	
115 120 125	
aga gtc aat caa ccc tcc att aag ggg att gcc aca ttt aaa caa tat	432
Arg Val Asn Gln Pro Ser Ile Lys Gly Ile Ala Thr Phe Lys Gln Tyr	
130 135 140	
tgg agt gtt cga aga tgg aaa cgc acg agt ggc acg att tct gtc agc	480
Trp Ser Val Arg Arg Ser Lys Arg Thr Ser Gly Thr Ile Ser Val Ser	
145 150 155 160	
aac cac ttt aga gcg tgg gaa aac tta ggg atg aat atg ggg aaa atg	528
Asn His Phe Arg Ala Trp Glu Asn Leu Gly Met Asn Met Gly Lys Met	
165 170 175	
tat gaa gtc gcg ctt act gta gaa ggc tat caa agt agc gga agt gct	576
Tyr Glu Val Ala Leu Thr Val Glu Gly Tyr Gln Ser Ser Gly Ser Ala	
180 185 190	
aat gta tat agc aat aca cta aga att aac ggt aac cct ctc tca act	624
Asn Val Tyr Ser Asn Thr Leu Arg Ile Asn Gly Asn Pro Leu Ser Thr	
195 200 205	

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 <213> Bacillus sp.

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 35 40 45
 Arg Lys Gly Lys Lys Phe Asn Glu Thr Gln Thr His Gln Gln Val Gly
 50 55 60
 Asn Met Ser Ile Asn Tyr Gly Ala Asn Phe Gln Pro Asn Gly Asn Ala
 65 70 75 80
 Tyr Leu Cys Val Tyr Gly Trp Thr Val Asp Pro Leu Val Glu Tyr Tyr
 85 90 95
 Ile Val Asp Ser Trp Gly Asn Trp Arg Pro Pro Gly Ala Thr Pro Lys
 100 105 110
 Gly Thr Ile Thr Val Asp Gly Gly Thr Tyr Asp Ile Tyr Glu Thr Leu
 115 120 125
 Arg Val Asn Gln Pro Ser Ile Lys Gly Ile Ala Thr Phe Lys Gln Tyr
 130 135 140
 Trp Ser Val Arg Arg Ser Lys Arg Thr Ser Gly Thr Ile Ser Val Ser
 145 150 155 160
 Asn His Phe Arg Ala Trp Glu Asn Leu Gly Met Asn Met Gly Lys Met
 165 170 175
 Tyr Glu Val Ala Leu Thr Val Glu Gly Tyr Gln Ser Ser Gly Ser Ala
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 Asn Val Tyr Ser Asn Thr Leu Arg Ile Asn Gly Asn Pro Leu Ser Thr
 195 200 205
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 tatgattatg aatttttgaa agatagecgtt ggctctggga caatgattct caatcatggc 180
 ggtacgttoa gtgccaatg gaacaatggt aacaacatat tattccgtaa aggtaaaaaa 240
 ttcaatgaaa cacaacacaca ccaacaagtt ggtaacatgt ccataaacta cggagccaac 300
 ttccaaccaa atggtaatgc gtatttatgc gtctatggtt ggactgttga cctcttctgc 360
 gaatattata ttgtcgacag ttggggcaac tggcgtccac caggagcaac gcctaagggg 420
 accatcactg ttgatggagg aacatatgat atctacgaga ctcttagagt caatcaaccc 480
 tccattaagg ggattgccac atttaaacia tattggagtg ttcgaagatc gaaacgcacg 540
 agtggcacga tttctgtcag caaccacttt agagcgtggg aaaacttagg gatgaatatg 600
 gggaaaatgt atgaagtcgc gcttactgta gaaggctatc aaagtagcgg aagtgctaata 660

gtatatagca atacactaag aattaacggg aacctctct caactattag taatgacgag 720
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 <212> DNA
 <213> Bacillus sp.

<220>
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<221> sig_peptide
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gca cta acc tta cct gca gaa ata att cag gca caa atc gtc acc gac 96
 Ala Leu Thr Leu Pro Ala Glu Ile Ile Gln Ala Gln Ile Val Thr Asp
 20 25 30

aat tcc att ggc aac cac gat ggc tat gat tat gaa ttt tgg aaa gat 144
 Asn Ser Ile Gly Asn His Asp Gly Tyr Asp Tyr Glu Phe Trp Lys Asp
 35 40 45

agc ggt ggc tct ggg aca atg att ctc aat cat ggc ggt acg ttc agt 192
 Ser Gly Ser Ser Gly Thr Met Ile Leu Asn His Gly Gly Thr Phe Ser
 50 55 60

gcc caa tgg aac aat gtt aac aac ata tta ttc cgt aaa ggt aaa aaa 240
 Ala Gln Trp Asn Asn Val Asn Asn Ile Leu Phe Arg Lys Gly Lys Lys
 65 70 75 80

ttc aat gaa aca caa aca cac caa caa gtt ggt aac atg tcc ata aac 288
 Phe Asn Glu Thr Gln Thr His Gln Gln Val Gly Asn Met Ser Ile Asn
 85 90 95

tac gga gcc aac ttc caa cca aat ggt aat gcg tat tta tgc gtc tat 336
 Tyr Gly Ala Asn Phe Gln Pro Asn Gly Asn Ala Tyr Leu Cys Val Tyr
 100 105 110

ggt tgg act gtt gac cct ctt gtc gaa tat tat att gtc gac agt tgg 384
 Gly Trp Thr Val Asp Pro Leu Val Glu Tyr Tyr Ile Val Asp Ser Trp
 115 120 125

ggc aac tgg cgt cca cca gga gca acg cct aag ggg acc atc act gtt 432
 Gly Asn Trp Arg Pro Pro Gly Ala Thr Pro Lys Gly Thr Ile Thr Val
 130 135 140

gat gga gga aca tat gat atc tac gag act ctt aga gtc aat caa ccc 480
 Asp Gly Gly Thr Tyr Asp Ile Tyr Glu Thr Leu Arg Val Asn Gln Pro

145 150 155 160

tcc att aag ggg att gcc aca ttt aaa caa tat tgg agt gtt cga aga 528
 Ser Ile Lys Gly Ile Ala Thr Phe Lys Gln Tyr Trp Ser Val Arg Arg
 165 170 175

tgc aaa cgc acg agt gcc acg att tct gtc agc aac cac ttt aga gcg 576
 Ser Lys Arg Thr Ser Gly Thr Ile Ser Val Ser Asn His Phe Arg Ala
 180 185 190

tgg gaa aac tta ggg atg aat atg ggg aaa atg tat gaa gtc gcg ctt 624
 Trp Glu Asn Leu Gly Met Asn Met Gly Lys Met Tyr Glu Val Ala Leu
 195 200 205

act gta gaa ggc tat caa agt agc gga agt gct aat gta tat agc aat 672
 Thr Val Glu Gly Tyr Gln Ser Ser Gly Ser Ala Asn Val Tyr Ser Asn
 210 215 220

aca cta aga att aac ggt aac cct ctc tca act att agt aat gac gag 720
 Thr Leu Arg Ile Asn Gly Asn Pro Leu Ser Thr Ile Ser Asn Asp Glu
 225 230 235 240

agc ata act ttg gat aaa aac aat 744
 Ser Ile Thr Leu Asp Lys Asn Asn
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 <212> PRT
 <213> Bacillus sp.

<400> 6

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 20 25 30
 Asn Ser Ile Gly Asn His Asp Gly Tyr Asp Tyr Glu Phe Trp Lys Asp
 35 40 45
 Ser Gly Gly Ser Gly Thr Met Ile Leu Asn His Gly Gly Thr Phe Ser
 50 55 60
 Ala Gln Trp Asn Asn Val Asn Asn Ile Leu Phe Arg Lys Gly Lys Lys
 65 70 75 80
 Phe Asn Glu Thr Gln Thr His Gln Gln Val Gly Asn Met Ser Ile Asn
 85 90 95
 Tyr Gly Ala Asn Phe Gln Pro Asn Gly Asn Ala Tyr Leu Cys Val Tyr
 100 105 110
 Gly Trp Thr Val Asp Pro Leu Val Glu Tyr Tyr Ile Val Asp Ser Trp
 115 120 125
 Gly Asn Trp Arg Pro Pro Gly Ala Thr Pro Lys Gly Thr Ile Thr Val
 130 135 140
 Asp Gly Gly Thr Tyr Asp Ile Tyr Glu Thr Leu Arg Val Asn Gln Pro
 145 150 155 160
 Ser Ile Lys Gly Ile Ala Thr Phe Lys Gln Tyr Trp Ser Val Arg Arg
 165 170 175
 Ser Lys Arg Thr Ser Gly Thr Ile Ser Val Ser Asn His Phe Arg Ala
 180 185 190

Trp Glu Asn Leu Gly Met Asn Met Gly Lys Met Tyr Glu Val Ala Leu
 195 200 205
 Thr Val Glu Gly Tyr Gln Ser Ser Gly Ser Ala Asn Val Tyr Ser Asn
 210 215 220
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 225 230 235 240
 Ser Ile Thr Leu Asp Lys Asn Asn
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 <213> Bacillus sp.

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 <213> Bacillus sp.

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 <222> (1)...(81)

<221> sig_peptide
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 1 5 10 15

gca cta acc tta cct gca gaa ata att cag gca 81
 Ala Leu Thr Leu Pro Ala Glu Ile Ile Gln Ala
 20 25

<210> 9
 <211> 27
 <212> PRT
 <213> Bacillus sp.

<400> 9
 Met Arg Gln Lys Lys Leu Thr Leu Ile Leu Ala Phe Leu Val Cys Phe
 1 5 10 15
 Ala Leu Thr Leu Pro Ala Glu Ile Ile Gln Ala
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<210> 10
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 <212> DNA
 <213> Bacillus sp.

<400> 10

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ataggaaactt tcccatttgc aagacgataa aaaatctttt tcccctattt tatcttatcg      180
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atztatgtca tattttctca cgcgcgtcca taatggaata tatatactct tttatacata      360
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<210> 11

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<213> Bacillus sp.

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<221> mat_peptide

<222> (701)...(1363)

<221> sig_peptide

<222> (620)...(700)

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ataggaaactt tcccatttgc aagacgataa aaaatctttt tcccctattt tatcttatcg      180
ccttgatcgg ttttaattgt aaactttatt ttagtttacg tgatgttccc tcattcatac      240
cattaatcac agttaacgct agagtcactt tttttcgggt ctcaaaaata cctgaagaac      300
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gataattatc cagtttcaaa atttgaaata gtgtgtatgg aatagtttga atgtcaactg      540
ctgtgaaagg agggtaggta gtaccgtaga cttcattacc aaaaattagt tgtaaaaaaa      600
ttaaaaggag gaatgccta atg aga caa aag aaa ttg acg ttg att tta gcc      652
Met Arg Gln Lys Lys Leu Thr Leu Ile Leu Ala
1 5 10

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ttt tta gtt tgt ttt gca cta acc tta cct gca gaa ata att cag gca Phe Leu Val Cys Phe Ala Leu Thr Leu Pro Ala Glu Ile Ile Gln Ala 15 20 25	700
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ggc ggt acg ttc agt gcc caa tgg aac aat gtt aac aac ata tta ttc Gly Gly Thr Phe Ser Ala Gln Trp Asn Asn Val Asn Asn Ile Leu Phe 60 65 70 75	844
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Ile Ser Asn Asp Glu Ser Ile Thr Leu Asp Lys Asn Asn
240 245

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<213> Bacillus sp.

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ataggaactt tcccatttgc aagacgataa aaaatctttt tccctattt tatottatcg 180
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<210> 13
<211> 150
<212> DNA
<213> Bacillus sp.

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<210> 14
<211> 56
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic oligonucleotide

<400> 14
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<210> 15
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<212> DNA
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<213> Artificial Sequence

<220>
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<400> 16
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31

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<220>
<223> synthetic oligonucleotide

<400> 17
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19

<210> 18
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<400> 18
cggtcgccgc atacacta

18

<210> 19
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<212> DNA
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<400> 19
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36

<210> 20
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<220>
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39

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<400> 21
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<210> 22
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<400> 22
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<220>
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<400> 25
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<210> 26
<211> 185
<212> DNA
<213> Bacillus pumilus

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 <222> (1)...(185)
 <223> n = A,T,C or G

<400> 26
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 catccatgcc gggttaaagc agtatcggtc catctaacag agaaggncctg catgaaagga 120
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 ggaaa 185

<210> 27
 <211> 81
 <212> DNA
 <213> Bacillus pumilus

<400> 27
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 acggctgtgc cggctcatgc g 81

<210> 28
 <211> 81
 <212> DNA
 <213> Bacillus pumilus

<220>
 <221> CDS
 <222> (1)...(81)

<400> 28
 atg aat ttg aaa aga ttg agg ctg ttg ttt gtg atg tgt att gga ttt 48
 Met Asn Leu Lys Arg Leu Arg Leu Leu Phe Val Met Cys Ile Gly Phe
 1 5 10 15
 gtg ctg aca ctg acg gct gtg ccg gct cat gcg 81
 Val Leu Thr Leu Thr Ala Val Pro Ala His Ala
 20 25

<210> 29
 <211> 27
 <212> PRT
 <213> Bacillus pumilus

<400> 29
 Met Asn Leu Lys Arg Leu Arg Leu Leu Phe Val Met Cys Ile Gly Phe
 1 5 10 15
 Val Leu Thr Leu Thr Ala Val Pro Ala His Ala
 20 25

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Applicant: De Buyt, et al.

Serial No.: US 09/909,207

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Title:

Xylanase, Microorganisms Producing it,
DNA Molecules, Methods for Preparing
this Xylanase and Uses of the Latter

Reference #: GC450-D1-US

Date Data Recorded: 2005-09-12

Computer: IBM PC-Compatible

Operating System: WindowsXP

Software: FastSEQ Version 4.0

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